

IN THE CLAIMS:

Please cancel claims 24-33 and 44-45 without prejudice, and add new claims 46-55.

1-45. (Canceled).

46. (New) A method of forming electroplated solder on an organic circuit board for attaching an IC chip, comprising:

providing an organic circuit board including a surface bearing electrical circuitry that includes at least one contact pad;

forming a solder mask layer that is placed on the board surface and patterned to expose the contact pad;

coating the surfaces of the solder mask layer and the contact pad with aqueous solutions which at least contains copper ions followed by reduction of the copper ions, wherein there is no reduction of noble metal ions;

forming a first thin non-noble metal layer that is deposited by electroless plating over the board surface;

forming a second thin metal layer that is deposited by electroplating over the first thin metal film;

forming a resist layer over the second thin metal layer, and forming at least one opening located at the contact pad;

forming a solder material in the opening by electroplating;

removing the resist layer, and then removing the first and second thin metal layers beneath the resist layer; and

reflowing the solder material to form a solder bump, wherein the first and second thin metal layers beneath the solder bump are dissolved completely into the solder bump.

47. (New) The method of claim 46, wherein the first thin metal layer is made of a metal selected from the group consisting of copper, tin, and tin-lead alloy.

48. (New) The method of claim 46, wherein the thin metal layer is a multilayer structure made of metals selected from the group consisting of copper, tin, nickel, chromium, titanium, copper-chromium alloy, and tin-lead alloy.

49. (New) The method of claim 46, wherein the second thin metal layer is made of a metal selected from the group consisting of copper, tin, and nickel.

50. (New) The method of claim 46, wherein the total thickness of the first and second thin metal layers is less than 0.005 millimeter.

51. (New) The method of claim 46, wherein the solder material is an alloy made by the mixture of the elements selected from the group consisting of lead, tin, silver, copper, bismuth, antimony, zinc, nickel, aluminum, magnesium, indium, tellurium, and gallium.

52. (New) The method of claim 46, further comprising the following step before the step of forming said first thin metal layer:
forming a barrier layer on said contact pad.

53. (New) The method of claim 52, wherein said barrier layer is made of metals selected from a group consisting of copper, tin, nickel, chromium, titanium, copper-chromium alloy, tin-lead alloy, and any alloy thereof.

54. (New) The method of claim 46, wherein said organic circuit board includes insulative layer is made of an organic material.

55. (New) The method of claim 55, wherein said organic material is selected from the group consisting of epoxy resin, polyimide, bismaleimide triazine, cyanate ester, polybenzocyclobutene, and a glass fiber composite.